



**PATENT APPLICATION**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of

Docket No: Q65935

KUSANO, YUKIHIRO, et al.

Appln.No : 09/960,345

Group Art Unit; 1771

Confirmation No.: 4619

Examiner: Norca Liz Torres Velazquez

Filed: September 24, 2001

For: RUBBER-BASED COMPOSITE MATERIAL AND RUBBER ARTICLE USING THE  
SAME

**SECOND SUPPLEMENTAL DECLARATION UNDER 37 C.F.R. §1.132**

Commissioner for Patents

P. O. Box 1450

Alexandria, VA 22313-1450

Sir:

I, Masao Yoshikawa, hereby declare and state as follows:

I am the same declarant who performed the experimentation described in the Declaration Under 37 C.F.R. § 1.132 dated June 21, 2005, and filed on June 29, 2005, and in the Supplemental Declaration Under 37 C.F.R. § 1.132 dated July 13, 2006, and filed on August 8, 2006. My personal history remains the same stated as stated in my prior Declaration.

The following experiment was conducted by me or under my direct supervision.

### **EXPERIMENT**

Each of tires A and B prepared in the same manner as described in Example 1 and Comparative Example of the previous Declarations was subjected to the same drum durability test as described in the Examples in the present specification. Then, each of the tested tires A and B was peeled to evaluate an adhesiveness between rubber and non-woven fabric.

The attached sheet shows photos I -VI for the tire A of Example 1 and the tire B of Comparative Example.

Each of the photos I and II shows the appearances of the portion to be peeled.

Each of the photos III shows the peeled portion.

Each of the photos IV shows the surface of the non-woven fabric in the peeled portion.

Each of the photos V shows the cross section of the peeled portion.

Each of the photos VI shows the expanded cross section of the above non-woven fabric.

As appeared from the each of photos I – V, the contact area of the non-woven fabric with rubber in the tire B of Comparative Example is smaller than that in the tire A of Example 1. As a result, the photo VI of the tire B show the disheveled non-woven fabric. Accordingly, the adhesiveness in the tire A of Example 1 is superior to that in the tire B of Comparative Example, which results in unexpectedly superior results.

Even if the non-woven fabric in Comparative Example is treated with a conventional dip treatment, the adhesiveness can not be enhanced because the non-woven fabric clogged to form a film, thereby reducing its contact area with the rubber to which the non-woven fabric is adhered, as described in the present specification (page 2, lines 15-21), so that the drum durability can not be effectively enhanced.

SECOND SUPPLEMENTAL DECLARATION  
UNDER 37 C.F.R. § 1.132  
U.S. Appl.No 09/960,345

Attorney Docket Q65935

I conclude that the present invention provides unexpectedly superior results by applying a non-woven fabric coated with a metallic compound reactable with sulfur by a PVD or CVD method, as compared to a tire using a conventionally dip-treated non-woven fabric.

I declare further that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any issuing thereon.

Date : Oct 5, 2006

Masato Yoshikawa  
Masato Yoshikawa



Sheet

	A (Example 1)	B (Comparative Example )
I		
II		
III		
IV		
V		
VI		